

What is claimed is:

1. A portable apparatus for moving a workload, comprising:
  - a base frame;
  - a mast supported by the base frame, the mast having a first end, a second end, and a length extending between the first end of the mast and the second end of the mast;
  - a lifting assembly associated with the mast for lifting the workload along at least a portion of the length of the mast; and
  - a tilting assembly associated with the mast for adjusting an incline of the mast.
2. The portable apparatus of claim 1, wherein portable apparatus further comprises a translation assembly associated with the base frame, the translation assembly adapted to facilitate movement of the portable apparatus.
3. The moving apparatus of claim 1, wherein the base frame comprises:
  - an expandable portion adapted to allow for expansion of the base frame;
  - and
  - a bight portion engaging the expandable portion, wherein the mast of the portable apparatus is connected to the bight portion.

4. The portable apparatus of claim 3, wherein the expandable portion comprises:

at least one telescoping cross member adapted to longitudinally expand inwardly and outwardly, the telescoping cross member connected to the bight portion of the base frame; and

at least two telescoping legs adapted to longitudinally expand inwardly and outwardly, each of the two telescoping legs connected to the at least one cross member.

5. The portable apparatus of claim 4, wherein each of the at least two telescoping legs comprises at least one forward wheel rotatably connected near a forward end of the telescoping leg, and a caster rotatably connected near a rearward end of the telescoping leg.

6. The portable apparatus of claim 5, wherein the caster is capable of rotating about at least two axes of rotation.

7. The portable apparatus of claim 6, wherein the caster of each of the at least two telescoping legs comprises:

a swivel rotatably connected to the telescoping leg;

an axle engaging the swivel; and

a caster wheel rotatably connected to the axle such that the caster wheel is capable of revolving about the axle.

8. The portable apparatus of claim 7, wherein the caster further comprises a locking mechanism adapted to engage the caster wheel so as to substantially impede the revolution of the caster wheel about the axle when the locking mechanism is in a locked position.

9. The portable apparatus of claim 8, wherein the caster further comprises at least one resistance disk disposed adjacent to the caster wheel of the caster, the resistance disk adapted to further impede the revolution of the caster wheel on the axle when the locking mechanism is in the locked position.

10. The portable apparatus of claim 1, wherein the mast is L- shaped and comprises:

a foot portion connected to the base frame; and

an elongated member connected to the foot portion.

11. The portable apparatus of claim 10, wherein the elongated member of the mast has a forward surface, a rearward surface oppositely disposed of the

forward surface, a first side surface extending generally from the forward surface to the rearward surface, and a second side surface oppositely disposed of the first side surface and extending generally from the forward surface to the rearward surface.

12. The portable apparatus of claim 11, wherein the elongated member includes at least one piece of box channel tubing.

13. The portable apparatus of claim 10, wherein the elongated member is connected to the foot portion via a pin.

14. The portable apparatus of claim 10, wherein the mast further comprises an extension member telescopically disposed in the elongated member such that the extension member is extendable from the elongated member.

15. The portable apparatus of claim 1, wherein the lifting assembly comprises:

a lifting frame for supporting at least a portion of the workload, the lifting frame longitudinally and reciprocatably traversable generally along at least a portion of the length of the mast; and

a hoist assembly engaging the lift frame, the hoist assembly adapted to traverse the lifting frame generally along at least a portion of the length of the mast.

16. The portable apparatus of claim 15, wherein the hoist assembly engages the lifting frame via a flexible belt, and the hoist assembly retracts or advances the flexible belt to cause the lift assembly to traverse generally along at least a portion of the length of the mast.

17. The portable apparatus of claim 16, wherein the hoist assembly includes a hand crank winch.

18. The portable apparatus of claim 15, wherein the hoist assembly is connected to the mast of the portable apparatus.

19. The portable apparatus of claim 15, wherein the portable apparatus further comprises a hoist post disposed generally adjacent to the mast, and the hoist assembly is connected to the hoist post.

20. The portable apparatus of claim 15, wherein the lifting frame comprises:  
an upper arm and a lower arm cooperating to support at least a portion  
of the workload;  
a brace member connecting the upper arm and lower arm in a vertically  
spaced relation, the brace member comprising at least one pair of  
guide bearings rotatably engaging the mast so as to permit the  
lifting frame to traverse generally along at least a portion of the  
length of the mast; and  
a platform connectable to at least one of the upper arm, the lower arm,  
the brace member, or combinations thereof; the platform adapted  
to cooperates with at least one of the upper arm, lower arm, the  
brace member, or combinations thereof to support at least a  
portion of the workload.

21. The portable apparatus of claim 20, wherein the lifting frame further  
comprises a strapping mechanism for securing at least a portion of the  
workload to at least a portion of the lifting frame.

22. The portable apparatus of claim 21, wherein the strapping mechanism  
comprises:

a flexible band capable of being disposed generally about at least a portion of the workload;

a tightening assembly connected to the brace member of the lifting frame, the tightening assembly adapted to advance and retract the flexible band so as to secure the flexible band about at least a portion of the workload and to secure at least a portion of the workload to at least a portion of the lifting frame; and

wherein the flexible band has a fastening end connected to a free end of the flexible band, the fastening end releasably connectable to at least a portion of at least one of the workload, the lifting frame, the flexible band, the tightening assembly, or combinations thereof.

23. The portable apparatus of claim 22, wherein the fastening end releasably connects to at least one of the workload, the lifting frame, the flexible band, or combinations thereof via at least one hook.

24. The portable apparatus of claim 20, wherein the platform comprises:

a first arched portion connected to the upper arm of the lifting frame, the first arched portion adapted to support at least a portion of a first end of the workload;

a second arched portion connected to the lower arm of the lifting frame,  
the second arched portion adapted to support at least a portion of  
a second end of the workload; and  
at least one supporting lip associated the second arched portion, the at  
least one supporting lip adapted to further support at least a  
portion of the second end of the workload.

25. The portable apparatus of claim 24, wherein the platform further  
comprises at least one support rail connecting the first arched portion and the  
second arched portion in a generally vertically spaced relation

26. The portable apparatus of claim 20, wherein the platform comprises:  
a first cradle adapted to support at least a portion of a first end of the  
workload;  
a second cradle adapted to support at least a portion of a second end of  
the workload; and  
a cradle support frame connected to at least one of the upper arm, the  
lower arm, the brace member, or combinations thereof, of the  
lifting frame and wherein the cradle support frame connects the  
first cradle portion and the second cradle portion in a generally  
horizontally spaced relation.



27. The portable apparatus of claim 20, wherein the platform comprises:  
an upper brace connected to the upper arm of the lifting frame, the  
upper brace adapted to support at least a portion of a first end the  
workload; and  
a lower brace connected to the lower arm of the lifting frame, the lower  
brace adapted to support at least a portion of a second end of the  
workload.
28. The portable apparatus of claim 27, wherein the platform further  
comprises at least one brace crossbeam connecting the upper brace and the  
lower brace in a generally vertically spaced relation.
29. The portable apparatus of claim 20, wherein the platform comprises:  
a bottom plane member adapted to support at least one portion of the  
lower end of the workload;  
at least one side plane member connected to the bottom plane member,  
the side support adapted to support at least one portion of the  
lower end of the workload, the upper end of the workload, or  
combinations thereof; and

wherein at least one of the bottom plane member, the at least one side plane member, or combinations thereof is connected to at least one of the upper arm, the lower arm, the brace member, or combinations thereof, of the lifting frame.

30. The portable apparatus of claim 1, wherein the tilting assembly includes at least one of a mechanical lift or a mechanical jack.

31. The portable apparatus of claim 30, wherein the tilting assembly includes a screw jack assembly, the screw jack assembly comprising a screw threadingly connected to the base frame and associated with the mast such that when the screw is rotated, the incline of the mast is adjusted.

32. The portable apparatus of claim 2, wherein the translation assembly comprises:

at least one telescoping housing adapted to longitudinally expand inwardly and outwardly, the telescoping housing connected to the base frame; and

at least two wheels rotatably connected to the telescoping housing whereby the portable apparatus may be tilted backward and wheeled along on the at least two wheels.

33. The portable apparatus of claim 2, wherein the translation assembly comprises at least one handle connected to the mast.

34. The portable apparatus of claim 33, wherein the at least one handle is connected to the mast generally near the first end the mast.

35. A portable apparatus for moving a workload, comprising:

- a base frame having an expandable portion adapted to allow for expansion of the base frame and a bight portion engaging the expandable portion;

- a mast connected to the bight portion of the base frame so as to be centrally supported by the bight portion of the base frame, the mast having a first end, a second end, and a length extending between the first end of the mast and the second end of the mast; the mast being L- shaped and comprising a foot portion and an elongated member connected to the foot portion

- a lifting assembly associated with the mast for lifting the workload along at least a portion of the length of the mast, the lifting assembly comprising a lifting frame for supporting at least a portion of the workload, the lifting frame longitudinally and reciprocateably traverseable generally along at least a portion of the length of the

mast and a hoist assembly engaging the lifting frame via a flexible belt, wherein the hoist assembly retracts or advances the flexible belt to cause the lift assembly to traverse generally along at least a portion of the length of the mast.

a tilting assembly associated with the mast for adjusting an incline of the mast wherein the tilting assembly includes a screw jack assembly, the screw jack assembly comprising a screw threadingly connected to the bight portion of the base frame and associated with the mast such that when the screw is rotated, the incline of the mast is adjusted; and

a translation assembly associated with the base frame, the translation assembly adapted to facilitate movement of the portable apparatus.

36. The portable apparatus of claim 35, wherein the expandable portion comprises:

at least one telescoping cross member adapted to longitudinally expand inwardly and outwardly, the telescoping cross member connected to the bight portion of the base frame; and

at least two telescoping legs adapted to longitudinally expand inwardly and outwardly, each of the two telescoping legs connected to the at least one cross member.

37. The portable apparatus of claim 36, wherein each of the at least two telescoping legs comprises at least one forward wheel rotatably connected near a forward end of the telescoping leg, and a caster rotatably connected near a rearward end of the telescoping leg.

38. The portable apparatus of claim 37, wherein the caster is capable of rotating about at least two axes of rotation.

39. The portable apparatus of claim 38, wherein the caster of each of the at least two telescoping legs comprises:

a swivel rotatably connected to the telescoping leg;

an axle engaging the swivel; and

a caster wheel rotatably connected to the axle such that the caster wheel is capable of revolving about the axle.

40. The portable apparatus of claim 39, wherein the caster further comprises a locking mechanism adapted to engage the caster wheel so as to substantially

impede the revolution of the caster wheel about the axle when the locking mechanism is in a locked position.

41. The portable apparatus of claim 40, wherein the caster further comprises at least one resistance disk disposed adjacent to the caster wheel of the caster, the resistance disk adapted to further impede the revolution of the caster wheel on the axle when the locking mechanism is in the locked position.

42. The portable apparatus of claim 35, wherein the elongated member of the mast has a forward surface, a rearward surface oppositely disposed of the forward surface, a first side surface extending generally from the forward surface to the rearward surface, and a second side surface oppositely disposed of the first side surface and extending generally from the forward surface to the rearward surface.

43. The portable apparatus of claim 42, wherein at least a portion of the lifting frame straddles the first side surface and second side surface of the elongated member of the mast and is in a slidable relation with respect to the forward surface and rearward surface of the elongated member of the mast.

44. The portable apparatus of claim 42, wherein the elongated member includes at least one piece of box channel tubing.

45. The portable apparatus of claim 35, wherein the elongated member is connected to the foot portion via a pin.

46. The portable apparatus of claim 35, wherein the mast further comprises an extension member telescopically disposed in the elongated member such that the extension member is extendable from the elongated member.

47. The portable apparatus of claim 35, wherein the hoist assembly includes a hand crank winch.

48. The portable apparatus of claim 35, wherein the hoist assembly is connected to the mast of the portable apparatus.

49. The portable apparatus of claim 35, wherein the portable apparatus further comprises a hoist post disposed generally adjacent to the mast, and the hoist assembly is connected to the hoist post.

50. The portable apparatus of claim 35, wherein the lifting frame comprises:

an upper arm and a lower arm cooperating to support at least a portion of the workload;

a brace member connecting the upper arm and lower arm in a vertically spaced relation, the brace member comprising at least one pair of guide bearings rotatably engaging the mast so as to permit the lifting frame to traverse generally along at least a portion of the length of the mast; and

a platform connectable to at least one of the upper arm, the lower arm, the brace member, or combinations thereof; the platform adapted to cooperates with at least one of the upper arm, lower arm, the brace member, or combinations thereof to support at least a portion of the workload.

51. The portable apparatus of claim 50, wherein the lifting frame further comprises a strapping mechanism for securing at least a portion of the workload to at least a portion of the lifting frame.

52. The portable apparatus of claim 51, wherein the strapping mechanism comprises:



a flexible band capable of being disposed generally about at least a portion of the workload; and

a tightening assembly connected to the brace member of the lifting frame, the tightening assembly adapted to advance and retract the flexible band so as to secure the flexible band about at least a portion of the workload and to secure at least a portion of the workload to at least a portion of the lifting frame; and

wherein the flexible band has a fastening end connected to a free end of the flexible band, the fastening end releasably connectable to at least a portion of at least one of the workload, the lifting frame, the flexible band, the tightening assembly, or combinations thereof.

53. The portable apparatus of claim 52, wherein the fastening end releasably connects to at least one of the workload, the lifting frame, the flexible band, the tightening assembly, or combinations thereof via at least one hook.

54. The portable apparatus of claim 50, wherein the platform comprises:

a first arched portion connected to the upper arm of the lifting frame, the first arched portion adapted to support at least a portion of a first end of the workload;

a second arched portion connected to the lower arm of the lifting frame,  
the second arched portion adapted to support at least a portion of  
a second end of the workload; and  
at least one supporting lip associated the second arched portion, the at  
least one supporting lip adapted to further support at least a  
portion of the second end of the workload.

55. The portable apparatus of claim 54, wherein the platform further  
comprises at least one support rail connecting the first arched portion and the  
second arched portion in a generally vertically spaced relation

56. The portable apparatus of claim 50, wherein the platform comprises:  
a first cradle adapted to support at least a portion of a first end of the  
workload;  
a second cradle adapted to support at least a portion of a second end of  
the workload; and  
a cradle support frame connected to at least one of the upper arm, the  
lower arm, the brace member, or combinations thereof, of the  
lifting frame and wherein the cradle support frame connects the  
first cradle portion and the second cradle portion in a generally  
horizontally spaced relation.

57. The portable apparatus of claim 50, wherein the platform comprises:  
an upper brace connected to the upper arm of the lifting frame, the  
upper brace adapted to support at least a portion of a first end the  
workload; and  
a lower brace connected to the lower arm of the lifting frame, the lower  
brace adapted to support at least a portion of a second end of the  
workload.

58. The portable apparatus of claim 57, wherein the platform further  
comprises at least one brace crossbeam connecting the upper brace and the  
lower brace in a generally vertically spaced relation.

59. The portable apparatus of claim 50, wherein the platform comprises:  
a bottom plane member adapted to support at least one portion of the  
lower end of the workload;  
at least one side plane member connected to the bottom plane member,  
the side support adapted to at least one portion of the lower end of  
the workload, the upper end of the workload, or combinations  
thereof; and

wherein at least one of the bottom plane member, the at least one side plane member, or combinations thereof is connected to at least one of the upper arm, the lower arm, the brace member or combinations thereof, of the lifting frame.

60. The portable apparatus of claim 35, wherein the translation assembly comprises:

at least one telescoping housing adapted to longitudinally expand inwardly and outwardly, the telescoping housing connected to the base frame; and

at least two wheels rotatably connected to the telescoping housing whereby the portable apparatus may be tilted backward and wheeled along on the at least two wheels.

61. The portable apparatus of claim 35, wherein the translation assembly comprises at least one handle connected to the mast.

62. The portable apparatus of claim 61, wherein at least one handle is connected to the mast generally near the first end the mast.

63. A caster capable of rotating about at least two axes of rotation for a portable apparatus, the caster comprising:

- a swivel;

- an axle engaging the swivel;

- a caster wheel rotatably connected to the axle such that the caster wheel is capable of revolving about the axle;

- a locking mechanism adapted to engage the caster wheel so as to substantially impede the revolution of the caster wheel about the axle when the locking mechanism is in a locked position; and

- at least one resistance disk disposed adjacent to the caster wheel, the resistance disk adapted to further impede the revolution of the caster wheel on the axle when the locking mechanism is in the locked position.